APPENDIX I

MEASURES TO AVOID AND MINIMIZE ADVERSE PROJECT EFFECTS DURING CONSTRUCTION

ENGINEERING APPENDIX I
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1.0 INTRODUCTION

These measures should be implemented to avoid and minimize potential adverse effects on riparian vegetation and aquatic resources that occur in the streams affected by the project. These measures include preparing a Quality Assurance Plan (QAP) project specific supplement that includes vegetation protection, storm water pollution prevention that includes erosion and sediment control, toxic materials control and spill response; and identifies construction period limits for threatened fish and wildlife protection. The QAP would also identify site monitoring, record-keeping requirements, equipment access route descriptions, proactive compliance strategy, and management actions for non-compliance. The construction contractor(s) would be responsible to adhere to the QAP.

2.0 VEGETATION PROTECTION

Best management practices (BMPs) will be provided in the QAP supplement to address vegetation protection during construction. If water is pumped from the creek to water replanted vegetation, the pump would have a screened intake to prevent harming juvenile fish.

3.0 STORM WATER POLLUTION PREVENTION

The construction of the project is subject to storm water quality regulations established under the National Pollutant Discharge Elimination System (NPDES), described in Section 402 of the federal Clean Water Act. Non-stormwater discharges from construction sites would be avoided or minimized. The primary elements of a Storm Water Pollution Prevention Plan (SWPPP) are:

- A description of site characteristics, including runoff and streamflow characteristics and soil erosion hazard, and construction procedures;
- Guidelines for proper application of erosion and sediment control BMPs, including vegetative and structural practices, which are to be delineated on a topographic map;
- Description of measures to prevent toxic materials spills; and
- Description of construction site housekeeping practices.

The SWPPP also specifies that the extent of soil and vegetation disturbance be minimized by control fencing or other means, and that the extent of soil disturbed at any given time also be minimized. The storm water pollution prevention measures will be contained in the QAP supplement, and must be retained at the construction site.

4.0 EROSION AND SEDIMENT CONTROL PLAN

Stormwater pollution prevention includes measures to minimize erosion and sediment movement into the stream. Increased sediment input to the stream has the potential to adversely affect aquatic species and their habitat. Erosion and sediment control measures would be included in the QAP supplement. Erosion and sediment control measures would require the contractor to:

- Conduct all construction work in accordance with site-specific construction plans that minimize the potential for sediment input to the stream;
- Identify with orange construction fencing all areas that require clearing, grading, revegetation, or recontouring, and minimize the extent of areas to be cleared, graded, or recontoured;
- Grade spoil sites to minimize surface erosion and apply erosion control measures as appropriate to prevent sediment from entering water courses or the stream channel, to the extent feasible;
- Mulch disturbed areas as appropriate and seed and plant with appropriate species as soon as practicable after disturbance; and
- Avoid operating equipment in flowing water by using temporary cofferdams or some other suitable diversion to divert channel flow around the channel and bank construction area.

5.0 TOXIC MATERIALS CONTROL AND SPILL RESPONSE

Stormwater pollution prevention includes measures to prevent toxic material spills. Such spills have the potential to adversely affect aquatic species. A toxic materials control and spill response plan that regulates the use of hazardous materials, such as petroleum-based products (fuel and lubricants for equipment) and other potentially toxic materials associated with project construction would be prepared and implemented by the selected contractor(s). The QAP supplement would include measures to:

- Establish a spill prevention and countermeasure plan before project construction that includes strict onsite handling rules to keep construction and maintenance materials from entering the river;
- Clean up all spills immediately and notify agencies of any spills and cleanup procedures;
- Locate staging and storage areas for equipment, materials, fuels, lubricants, solvents, and other possible contaminants outside the rivers normal high-water area, and a distance of greater than 300 feet (90 meters) from the creek;
- Remove vehicles from the creek's normal high-water area, and a distance of greater than 300 feet (90 meters) before refueling and lubricating; and
- Avoid operating equipment in flowing water.

6.0 CONSTRUCTION WORK WINDOW

Construction is planned for the in-water work season from July 1 to October 31, 2001 to minimize impacts on aquatic species. Removal of this vegetation would be limited to after July 1 to reduce impacts to nesting birds. Actual vegetative planting would be done in the fall, winter, or spring of the construction year, when plants are dormant. The ODFW would be overseeing the planting operation, if performed outside the in-water work window, to ensure minimal impact to threatened species.

7.0 FISH CAPTURE

If a sick, injured, or dead specimen of a threatened or endangered species is found, the finder must notify the Vancouver Field Office of NOAA Fisheries Law Enforcement at (360) 418-4246. The finder must take care in handling sick or injured specimens to ensure effective treatment, and in handling dead specimens to preserve biological material in the best possible condition for later analysis of cause of death. The finder also has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed unnecessarily.

Ensure the work crew has been trained in fish salvage techniques to IDFG standards (i.e. minimize the time held to minimize trauma, cleanliness, use transport/holding buckets with only clean water, use dip nets, etc.). The work crew must also have proper authority and permit to proceed with any necessary salvage of juvenile chinook salmon and steelhead.

Confer with NOAA Fisheries and the IDFG if adult steelhead arrive between January 1 and January 15 to determine whether to discontinue all main channel instream work with machinery until the following work season. Main channel instream work during these two weeks shall halt once adult steelhead have been observed until NOAA Fisheries verbally agrees that any construction activity would not be likely to adversely affect the adult steelhead.

Confer with NOAA Fisheries and the IDFG on the presence of any chinook redds in the 12-~~Mile Reach~~mile reach during the spawning season to determine if and how planned project activities can proceed during the construction season. If redds are present, construction shall not begin until NOAA Fisheries verbally agrees that activities would not be likely to adversely affect the redds.

Provide at least 24 hours advance notice to NOAA Fisheries personnel to allow their observation of project activities.

8.0 TURBIDITY MONITORING

Monitoring for turbidity would occur during active in-water work periods at the following monitoring locations:

- An undisturbed site (representative background) 100 feet (30 meters) upstream from the fill or discharge site;
- 100 feet (30 meters) downstream from the fill or discharge site;
- At the fill or discharge site; and
- At least a half mile below the fill or discharge site.

The Biological Opinion Reasonable and Prudent Measure #4c requires limiting in-stream work to 4 hours per day if construction work produces unacceptable levels of sediment under the CWA. Unacceptable sediment levels would violate the anti-degration policy defined in 40 CFR 131.12, which requires construction methods be consistent with maintaining and protecting water quality levels necessary to support propagation of fish and wildlife.

9.0 CARE AND DIVERSION OF WATER

- Use turbidity curtains, where water velocities allow, trapping sediment, and avoiding adverse impacts to substrate.

- Use cofferdams and pumps, as described in the BA, to move water in side channels around the work site to avoid sediment problems.

- Limit instream work to four hours per day, if machine work produces unacceptable levels of sediment under the Clean Water Act.

- Minimize work along the stream banks to keep sediment, rock, and other objects from entering the water and to minimize disruption to vegetation.

- Cease project operations under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.

- For all water intakes used for a project, including pumps used to isolate an in-water work area, install a fish screen that is operated and maintained according to NOAA Fisheries' fish screen criteria (NMFS 1995; NMFS l996; http://www.salmonidaho.com/screenshop/criteria.htm).

Because of the relatively small size and very pristine nature of the Challis Hotsprings Creek, sediment and turbidity potentially generated by unmanaged in-water work to create fords/water gaps, gravel dam/riffles, pipe arch installations, channel deepening, and pond and channel realignment would have an unacceptable impact. The following specific work procedure should be followed for in-water work on the Challis Hotsprings Creek:

- In-water work areas will be coffer dammed and the channel flow pumped around the work area;

- Draw down the water level, within the coffer dammed area, slowly (less than a rate of 1 inch per 15 minutes);

- Capture and release the fish within this area, as the level drops;

- Begin in-water excavation and fill, once all the water in the coffer dammed area has been removed and there are no signs of remaining fish; and

- Diffuse the discharge flow for the pumped diversion so that the channel is not eroded at the discharge location.

Note: some fish will be hidden from sight and remain within the cofferdam area after the water is removed. It is expected that these fish will be killed by the construction work.

- The installation of the cobble beds and their associated gravel fill foundation will not require coffer dams and diversion if the installation uses pre-washed cobbles and gravels, and each installation is completed within a 1-hour time frame.